RECEIVED
CENTRAL FAX CENTER

FEB 2 7 2007

BOARD OF PATENT APPEALS AND INTERFERENCES
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	**Paul Marie Ayoub**	§	**Group Art Unit: 1764**
Serial No.:	**10/772,023**	§	**Examiner: John Christopher Douglas**
Filed:	**February 4, 2004**	§	
For:	**Methods of Preparing Branched Alkyl Aromatic Hydrocarbons**	§	**Atty. Docket: SHELL-TH2229**

CLAIMS APPENDIX

1. A method for the production of alkyl aromatic hydrocarbons, comprising:

introducing a first hydrocarbon stream comprising olefins and paraffins into an isomerization unit, wherein the isomerization unit is configured to isomerize at least a portion of linear olefins in the first hydrocarbon stream to branched olefins, and wherein at least a portion of the unreacted components of the first hydrocarbon stream and at least a portion of the produced branched olefins form a second hydrocarbon stream;

introducing at least a portion of the second hydrocarbon stream and aromatic hydrocarbons into an alkylation unit, wherein the alkylation unit is configured to alkylate at least a portion of the aromatic hydrocarbons with at least a portion of the olefins in the second hydrocarbon stream to produce alkyl aromatic hydrocarbons, wherein at least a portion of the produced alkyl aromatic hydrocarbons comprise a branched alkyl group, and wherein at least a portion of the unreacted components of the second hydrocarbon stream, at least a portion of the aromatic hydrocarbons and at least a portion of the produced alkyl aromatic hydrocarbons form an alkylation reaction stream;

separating alkyl aromatic hydrocarbons from the alkylation reaction stream to produce an unreacted hydrocarbons stream and an alkyl aromatic hydrocarbons stream; the unreacted hydrocarbons stream comprising at least a portion of the unreacted components of the second hydrocarbon stream and aromatic hydrocarbons;

separating at least a portion of the paraffins and at least a portion of the olefins from the unreacted hydrocarbons stream to produce an aromatic hydrocarbons stream and a paraffins and unreacted olefins stream; and

introducing at least a portion of the paraffins and unreacted olefins stream into a dehydrogenation unit, wherein the dehydrogenation unit is configured to dehydrogenate at least a portion of paraffins in the paraffins and unreacted olefins stream to produce olefins, and wherein at least a portion of the produced olefins exit the dehydrogenation unit to form an olefinic hydrocarbon stream; and

introducing at least a portion of the olefinic hydrocarbon stream into the isomerization unit.

2. The method of claim 0, wherein the first hydrocarbon stream is produced from an olefin oligomerization process.

3. The method of claim 0, wherein the first hydrocarbon stream is produced from a Fischer-Tropsch process.

4. The method of claim 0, wherein the first hydrocarbon stream comprises olefins and paraffins having a carbon number from 10 to 13.

5. The method of claim 0, wherein the first hydrocarbon stream comprises olefins and paraffins having a carbon number from 10 to 16.

6. The method of claim 0, wherein the isomerization unit is operated at a reaction temperature between about 200 °C and about 500 °C.

7. The method of claim 0, wherein the isomerization unit is operated at a reaction pressure between about 0.1 atmosphere and about 10 atmospheres.

8 The method of claim 0, wherein at least a portion of the branched olefins comprise an